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Online versus paper homework –how does it affect student experience, attitudes, and learning?

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In many first-year physics courses, students use publisher-created online homework systems that provide student learning supports including hints to address specific mistakes and additional resources such as tutorials, videos, or simulations. Compared to traditional paper-based homework, these online systems have advantages (e.g. 24/7 hint access, problems often Physics Education Research-informed) as well as disadvantages (e.g. very expensive, potential privacy or technical issues).

To learn more about how students use and perceive different homework formats, as well as the realized effects of their advantages/disadvantages, we provided students in an introductory physics class with both an e-textbook with publisher-created online homework problems and equivalent paper homework problems. Each student was randomly assigned to a group that was graded on either the online or the written homework to separate students into two groups. Students were provided access to both forms of homework for equitability purposes, but we found the vast majority of students exclusively used the form of homework they were graded on. Using surveys at the beginning and at the end of the term, we studied the students'attitudes towards online vs paper homework, how they used it, their satisfaction with the format, the relative effect on their grades, as well as other questions related to course behavior and preferences. We will report our findings from these surveys, including changes between the beginning and the end of the term, as well as the educational implications of our findings.

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